1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Applicant is respectfully requested to provide a location within the disclosure to support any further amendments to the claims due to when filing an amendment an applicant should show support in the original disclosure for new or amended claims. See MPEP § 714.02 and § 2163.06 ("Applicant should specifically point out the support for any amendments made to the disclosure.").

Response to Arguments

3. Applicant's arguments, see pages 11-13(top), filed 26 June 2008, with respect to claims 1, 3, 21, 22 and 23 have been fully considered and are persuasive. The 35 U.S.C. 102(b) rejection of claims 1, 3, 21, 22 and 23 has been withdrawn.

4. Applicant's arguments filed 26 June 2008, with respect to the 35 U.S.C. 103(a) rejection(s) have been fully considered but they are not persuasive as set forth below.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In the instant case, the recitation to "the semiconductor switch being a semiconductor switch having a current detecting function provided with a terminal for current detection to detect a current which flows in the electrothermal heating element *without using a heater current detecting resistor placed in series with the semiconductor switch and the electrothermal heating element* for detection of the current flowing in the electrothermal heating element." Specifically, the negative recitation to "*without using a heater current detecting resistor placed in series with the semiconductor switch and the electrothermal heating element*". Applicant directed the examiner to pages 2-3 and specifically page 3, lines 1-56 for the disclosure of such a negative limitation. Page 3, line 1-6 state "When *an additional resistance is inserted* to detect the current flowing in the electrothermal heating element of the air heater, accordingly, some defects may arise; e.g., voltage and current to be applied to the electrothermal heating element is largely reduced. The insertion of such additional resistance would also lead to an increase in size of the air heater system." While there is disclosure to "not" inserting an additional resistance, there is no disclosure to not inserting the additional resistor in series between the semiconductor switch and the electrothermal heating element. Therefore, the recitation to "the semiconductor switch being a semiconductor switch having a current detecting function provided with a terminal for current detection to detect a current which flows in the electrothermal heating element *without using a heater current detecting resistor placed in series with the semiconductor switch and the*

electrothermal heating element for detection of the current flowing in the electrothermal heating element." is deemed new matter.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1, 3, 4 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beetz et al. (U.S. Publication No. 2002/0011484) in view of McGregor et al. (U.S. Patent No. 5,464,965).

Beetz et al. disclose an air heater system (1) comprising: an electrothermal heating element (PTC heating elements); a frame made out of metal (page 2, paragraph 23); and the control device being fixed within the box-shaped lateral frame bar (5; page 2, paragraph 31).

With respect to the limitation of a semiconductor switch connected to the electrothermal heating element in series for controlling energization to the electrothermal heating element, Beetz et al disclose control board (10) including control electronics (12) to determine the amount of current which is to be delivered by power electronics components (11) to respective heating elements (2). The printed circuit board (10) of Beetz et al. inherently has a semiconductor switching means within the control electronics (12) and power electronics components (11) or the printed circuit board would not be able to determine and control the amount of power (*DC current based on vehicle battery power supply*) delivered to the device. Furthermore, Beetz et al. disclose connecting the PTC elements in series to the control device (page 2, paragraphs 31-33).

With respect to the limitation of semiconductor switch being mounted on a wiring board and the frame and wiring board being made of resin, Beetz et al. explicitly disclose the frame being made of plastic or metal (page 2, paragraph 23) and plastic is

clearly and inherently a synthetic resin. Furthermore, Beetz et al. all disclose a printed circuit board (10) as noted above. It is further known in the art that circuit boards are traditionally sealed with thermoplastic resin. Therefore, Beetz et al. fully meets "a wiring board on which the semiconductor switch is mounted" and "the frame and the wiring board are made of resin" given its broadest reasonable interpretation.

Beetz et al. disclose all of the limitations of the claimed invention, as previously set forth, except for the semiconductor switch being a semiconductor switch having a current detecting function provided with a terminal for current detection to detect a current which flows in the electrothermal heating element; an electronic control unit receiving the current signal and controlling on-off switching of the semiconductor switch in part based on the current signal, resistance value control means for controlling a resistance value of the electrothermal heating element based on output corresponding to the current which flows in the electrothermal heating element detected through the current detection terminal of the semiconductor switch , the electrothermal heating element heating the air, and means for detecting a voltage signal across the electrothermal heating element, the electronic control unit receiving the current and voltage signals to determine a resistance value of the electrothermal heating element, and the electronic control unit controlling a resistance value of the electrothermal element based on the current and voltage signals by on-off switching of the semiconductor switch; and failure detection means for detecting a failure of the electrothermal heating element by detecting a resistance value of the electrothermal heating element based on output corresponding to the current which flows in the

electrothermal heating element detected through the current detection terminal of the semiconductor switch.

However, Having a resistance varying temperature based heating element connected in series to a switch being controlled by sensing current from the switch and voltage across the heater and further controlling the resistance across the heater by switching ON/OFF the switch is known in the art. McGregor et al., for example teach a variable resistance heating element being controlled by a switch, as recited by applicant, in high temperature environments in which such structures are susceptible to high temperature related failures (column 1, lines 12-40). McGregor et al. explicitly teach a semiconductor switch having a current detecting function provided with a terminal for current detection to detect a current which flows in the electrothermal heating element (switch 13 signal connected to current sensor 15; see Figures 2, 5); an electronic control unit (circuit to the right of current sensor 15 and voltage sensor 19) receiving said current signal and controlling on-off switching of the semiconductor switch (switch 13) in part based on said current signal (column 2, line 52 – column 10, line 12), resistance value control means (resistance detector 21) for controlling a resistance value of the electrothermal heating element (pitot tube heater) based on output corresponding to the current which flows in the electrothermal heating element (pitot tube heater) detected through the current detection terminal of the semiconductor switch (current sensor 15 connected to switch 13), said electrothermal heating element (pitot tube heater) heating said air, and means for detecting a voltage signal across the electrothermal heating element (voltage sensor 19), said electronic control unit (circuit

to the right of current sensor 15 and voltage sensor 19) receiving said current and voltage signals (see Figures 2, 5) to determine a resistance value of the electrothermal heating element (pitot tube heater), and said electronic control unit controlling a resistance value of the electrothermal element (pitot tube heater) based on said current and voltage signals by on-off switching of the semiconductor switch (switch 13) (column 2, line 52 – column 10, line 12).

With respect to the limitations of claim 21, McGregor et al. disclose the resistance control means (21) providing a signal to the logic circuit (41) that provides adjusting of the temperature of the electrothermal heating element (pitot tube heater). Furthermore, the electrothermal heating element (pitot tube heater) and control circuitry of McGregor et al. have a initial power-up stage, a temperature maintaining stage, and a failure stage and the multiple stages are controlled to heat the electrothermal heating element (pitot tube heater) to the appropriate temperature. Therefore, McGregor et al. fully meets "said resistance value control means controls the resistance value of the electrothermal heating element to adjust the temperature of the electrothermal heating element in multiple stages so as to bring the temperature of the intake air to an appropriate temperature for an operating condition of the internal combustion engine" Given its broadest reasonable interpretation.

With respect to the limitations of claim 22, McGregor et al. disclose a switch (13) and the switch (13) would have to have a body or main body which is connected to the electrothermal heating element (pitot tube heater) as shown in Figures 2, 5. Furthermore, the current output signal is based on the output of the timer (37) which

produces 40 ms clock pulse and power output accordingly. Therefore, McGregor et al. fully meets "the semiconductor switch includes: a main body connected to the electrothermal heating element in series for controlling energization to the electrothermal heating element, a current detection circuit which detects current passing through the main body, and a current detection terminal outputting a current signal at a predetermined ratio to current passing through the electrothermal heating element' Given its broadest reasonable interpretation.

With respect to the limitations of claim 23, McGregor et al. disclose the semiconductor switch (switch 13) having a current detecting function (current sensor 15) provided with a terminal for current detection to detect a current which flows in the electrothermal heating element (pitot tube heater) without using a heater current detecting resistor placed in series with the semiconductor switch and the electrothermal heating element for detection of the current flowing in the electrothermal heating element (see Figures 2, 5).

McGregor et al. further teach the advantage of such a configuration provides a highly reliable and uncomplicated circuit having a small number of components, thereby making a more efficient and less expensive control circuit for a temperature varying resistance heater.

In addition, McGregor et al. teach a failure detection means (column 2, lines 52-62; column 7, claim 5; column 8-10, claim 10-11) for detecting a failure of the electrothermal heating element (pitot tube heater) by detecting a resistance value of the electrothermal heating element (pitot tube heater) based on output corresponding to the

current which flows in the electrothermal heating element detected through the current detection terminal of the semiconductor switch (column 2, line 52 – column 10, line 12). It is known in the art that such a failure detection means increases the operational safety and lifetime of a heating device.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the heater control circuitry of the PTC heater of Beetz et al. with the controlling means (i.e. current sensing and voltage sensing providing resistance control switching of the resistance varying temperature based heating element) in order to provide a highly reliable and uncomplicated circuit having a small number of components, thereby making a more efficient and less expensive control circuit for a temperature varying resistance heater. In addition, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the heater control circuitry of the PTC heater of Beetz et al. with the failure detection means of McGregor et al. in order to increase the operational safety and lifetime of a heating device.

11. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beetz et al. (U.S. Publication No. 2002/0011484) in view of McGregor et al. (U.S. Patent No. 5,464,965) as applied to claims 1, 3 and 4 above, and further in view of Hidetaka et al. (Japanese Publication No. JP 07078671 A) as evidenced by Bohlender et al. (U.S. Patent No. 5,057,672).

Beetz et al. in view of McGregor et al. discloses all of the limitations including a frame being made of plastic or metal, as previously set forth, except for specifically calling for a part of the frame being resin.

However, a part of a heater frame being resin, as described by Hidetaka et al., is known in the art. Hidetaka et al. teach a heat radiating part comprising of part of the frame-shaped case (3) made of a heat resistant resin being fixed in a frame shaped housing (4) made of metal to suppress conduction of the heat from the radiation part to the housing, thereby effectively heating the air through the heating element (English translation of Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the frame of the Beetz et al. in view of McGregor et al. with the part resin, part metal frame of Hidetaka et al. to suppress conduction of the heat from the radiation part to the housing, thereby effectively heating the air through the heating element.

With respect to the limitations of claims 5 and 6 and the electrothermal heating element having such a temperature converging property that a temperature rises and then converges to a predetermined convergence temperature when the electrothermal heating element is continuously supplied with maximum allowable voltage, Beetz et al. explicitly disclose a PTC heating element being the electrothermal heating element. It is known in the art, as described by Bohlender et al., in column 2, lines 3-14, that PTC heating elements are characterized by low electric resistance in the cold state, this resistance increases with rising temperature, so that the current flow through the PTC heating element is reduced as its temperature rises. It is also known that PTC heating

elements have self regulating properties thereby preventing overheating of the PTC heating elements. Furthermore, the temperature capable of being attained by a PTC heating element can be determined by the selection of certain parameters during its manufacture. Therefore, the Beetz-McGregor-Hidetaka air heater system combination inherently has a temperature converging property that a temperature rises and then converges to a predetermined convergence temperature when the electrothermal heating element is continuously supplied with maximum allowable voltage, due to the heating element being a PTC heater as evidenced by Bohlender et al.

In addition, with respect to the further limitations of claim 5 and the resinous part being arranged in such a place that the resinous part has rigidity adequate for actual use even when the electrothermal heating element is at the convergence temperature, Beetz et al. explicitly disclose the frame of the heater being made of plastic (page 2, paragraph 23). Furthermore, Hidetaka et al. explicitly teach the resinous material of the frame case (3) being heat resistant (English translation of Abstract). Therefore, if both Beetz et al. and Hidetaka et al. teach utilizing a resin material for the frame of a PTC element heater, the resinous part would inherently have a rigidity adequate for actual use even when the electrothermal heating element is at the convergence temperature inherent to a PTC heating element or the heaters would not function as intended.

Furthermore, with respect to the further limitations of claim 6 and the frame including a resinous part made of resin having a predetermined deflection temperature under load, and the resinous part is arranged in such a place that the temperature of the resinous part remains below the deflection temperature under load even when the

electrothermal heating element is at the convergence temperature, the Examiner respectfully reiterates that Beetz et al. explicitly disclose the frame of the heater being made of plastic (page 2, paragraph 23) and Hidetaka et al. explicitly teach the resinous material of the frame case (3) being heat resistant (English translation of Abstract). The Examiner, as well as Applicant within the specification, notes that any resinous part made of resin inherently has a predetermined deflection. Therefore, if both Beetz et al. and Hidetaka et al. teach utilizing a resin material for the frame of a PTC element heater, the resinous parts made of resin would inherently have a predetermined deflection temperature under load. Furthermore, the resinous parts of Beetz et al. (entire frame) and Hidetaka et al. (inner region adjacent PTC heater elements) would be inherently arranged such that the temperature of the resinous part remains below the deflection temperature under load even when the electrothermal heating element is at the convergence temperature inherent to a PTC heating element or the heaters would not function as intended.

12. Claims 7-11and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beetz et al. (U.S. Publication No. 2002/0011484) in view of McGregor et al. (U.S. Patent No. 5,464,965) as applied to claims 1 and 4 above, and further in view of Yoshimura (U.S. Patent No. 6,747,432).

Beetz et al. in view of McGregor et al. discloses all of the limitations of the claimed invention, as previously set forth, except for the semiconductor switch and the

wiring board being covered with resin so as to render the semiconductor switch and the wiring board waterproof.

However, a control circuit comprising a switching mechanism in the vicinity of working parts of a vehicle being covered with a resin to make the circuitry waterproof is known in the art. Yoshimura, for example, teaches a drive apparatus/circuit (21) comprising a switching circuit (34) being placed in the vicinity of operating device in a heated vehicle engine is a state resin-molded and dustproof/waterproof sealed mixture (column 5, lines 10-13). It is known in the art that such circuitry placed is a resin-molded state produces a dustproof and waterproof-sealed circuit, thereby increasing the operating longevity of the circuit device. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the heater control circuitry of Beetz et al. in view of McGregor et al. with the control circuitry being placed in a resin-molded state in order to provide a dustproof and waterproof-sealed circuit, thereby increasing the operating longevity of the circuit device.

With respect to the limitations of claims 8-11 and 15-18, McGregor et al. disclose a failure detection means (column 2, lines 52-62; column 7, claim 5; column 8-10, claim 10-11) for detecting a failure of the electrothermal heating element (pitot tube heater) by detecting a resistance value of the electrothermal heating element (pitot tube heater) based on output corresponding to the current which flows in the electrothermal heating element detected through the current detection terminal of the semiconductor switch (column 2, line 52 – column 10, line 12).

With respect to the limitation of claims 8 and 15 and the semiconductor switch being fixed to the frame in such a place that the temperature of the semiconductor switch becomes the shut-off temperature when the temperature of the electrothermal heating element reaches an excessive temperature, Beetz et al. explicitly disclose the control device of the heater fixed within the frame (prior art; page 1, paragraph 4; invention; page 2, paragraph 25; see Figures 3, 4). Therefore, Beetz et al. in view of McGregor et al. and Yoshimura would have the semiconductor switch being attached to the frame and further shut-off when the temperature of the electrothermal heating element reaches an excessive temperature.

13. Claims 12, 13, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beetz et al. (U.S. Publication No. 2002/0011484) in view of McGregor et al. (U.S. Patent No. 5,464,965) and Yoshimura (U.S. Patent No. 6,747,432) as applied to claims 7 and 14 above, and further in view of Yoshimura (U.S. Patent No. 6,747,432).

Beetz et al. in view of McGregor et al. and Yoshimura discloses all of the limitations including a frame being made of plastic or metal, as previously set forth, except for specifically calling for a part of the frame being resin.

However, a part of a heater frame being resin, as described by Hidetaka et al., is known in the art. Hidetaka et al. teach a heat radiating part comprising of part of the frame-shaped case (3) made of a heat resistant resin being fixed in a frame shaped housing (4) made of metal to suppress conduction of the heat from the radiation part to

the housing, thereby effectively heating the air through the heating element (English translation of Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify frame of the Beetz-McGregor air heater system combination with the part resin, part metal frame of Hidetaka et al. to suppress conduction of the heat from the radiation part to the housing, thereby effectively heating the air through the heating element.

With respect to the limitations of claims 12, 13, 19 and 20 and the electrothermal heating element having such a temperature converging property that a temperature rises and then converges to a predetermined convergence temperature when the electrothermal heating element is continuously supplied with maximum allowable voltage, Beetz et al. explicitly disclose a PTC heating element being the electrothermal heating element. It is known in the art, as described by Bohlender et al. in column 2, lines 3-14, that PTC heating elements are characterized by low electric resistance in the cold state, this resistance increasing with rising temperature, so that the current flow through the PTC heating element is reduced as its temperature rises. It is also known that PTC heating elements have self regulating properties thereby preventing overheating of the PTC heating elements. Furthermore, the temperature capable of being attained by a PTC heating element can be determined by the selection of certain parameters during its manufacture. Therefore, Beetz et al. in view of McGregor et al. and Yoshimura inherently has a temperature converging property that a temperature rises and then converges to a predetermined convergence temperature when the electrothermal heating element is continuously supplied with maximum allowable

voltage, due to the heating element being a PTC heater as evidenced by Bohlender et al.

In addition, with respect to the further limitations of claims 12 and 19 and the resinous part being arranged in such a place that the resinous part has rigidity adequate for actual use even when the electrothermal heating element is at the convergence temperature, Beetz et al. explicitly disclose the frame of the heater being made of plastic (page 2, paragraph 23). Furthermore, Hidetaka et al. explicitly teach the resinous material of the frame case (3) being heat resistant (English translation of Abstract). Therefore, if both Beetz et al. and Hidetaka et al. teach utilizing a resin material for the frame of a PTC element heater, the resinous part would inherently have a rigidity adequate for actual use even when the electrothermal heating element is at the convergence temperature inherent to a PTC heating element or the heaters would not function as intended.

Furthermore, with respect to the further limitations of claims 13 and 20 and the frame including a resinous part made of resin having a predetermined deflection temperature under load, and the resinous part is arranged in such a place that the temperature of the resinous part remains below the deflection temperature under load even when the electrothermal heating element is at the convergence temperature, the Examiner respectfully reiterates that Beetz et al. explicitly disclose the frame of the heater being made of plastic (page 2, paragraph 23) and Hidetaka et al. explicitly teach the resinous material of the frame case (3) being heat resistant (English translation of Abstract). The Examiner, as well as Applicant within the specification, notes that any

resinous part made of resin inherently has a predetermined deflection. Therefore, if both Beetz et al. and Hidetaka et al. teach utilizing a resin material for the frame of a PTC element heater, the resinous parts made of resin would inherently have a predetermined deflection temperature under load. Furthermore, the resinous parts of Beetz et al. (entire frame) and Hidetaka et al. (inner region adjacent PTC heater elements) would be inherently arranged such that the temperature of the resinous part remains below the deflection temperature under load even when the electrothermal heating element is at the convergence temperature inherent to a PTC heating element or the heaters would not function as intended.

Remarks

14. With respect to applicants' argument/reply in regards to the 35 U.S.C. 112, first paragraph, new matter rejection, the argument is not deemed persuasive since the passage as noted is in the "background of the invention" and not in the "disclosure of the invention" where Figure 4 is disclosed. There is no disclosure to a correlation between Figure 4 and the passage. Furthermore, the line/wire connection from the heating element to the controller itself is a "resistance" causing change in the value of current along the connection. Therefore, the new matter rejection is maintained.

15. With respect to applicants' argument/reply that McGregor et al. does not teach a semiconductor switch having current detection, the examiner respectfully disagrees. McGregor further teach the switch (13) having a current sensor (15) sensing the current that is flowing from the switch (13) based on whether of not the switch (13) is enabled

by the transistor (47). Furthermore, Beetz et al. is cited as prior for at least the limitation of being used in a vehicle in which DC current from a battery would be used to Heat and energize the device. Therefore, Beetz et al. in view of McGregor et al. fully meets " the semiconductor switch being a semiconductor switch having a DC current detecting function provided with a terminal for current detection to detect a DC current which flows in the electrothermal heating element" given its broadest reasonable interpretation.

16. With respect to applicants' argument/reply that Beetz et al. essentially teaches against the use of detecting abnormality of heater temperature due to the use of heat sink (6) to cool power transistor (11), the examiner respectfully disagrees. Beetz et al. disclose an air heater system (1) comprising an electrothermal heating element (PTC heating elements), a frame made out of metal (page 2, paragraph 23); and the control device being fixed within the box-shaped lateral frame bar (5; page 2, paragraph 31). Beetz et al further disclose control board (10) including control electronics (12) to determine the amount of current which is to be delivered by power electronics components (11) to respective heating elements (2). The printed circuit board (10) of Beetz et al. inherently has a semiconductor switching means within the control electronics (12) and power electronics components (11) or the printed circuit board would not be able to determine and control the amount of power (*DC current based*) delivered to the device. Beetz et al. also disclose the need to reduce the overall temperature of the switching components (power transistor 11) with the use of a heat sink (6) to cool power transistor (11). However, there is no disclosure or teaching in Beetz et al. that implies that detection of a heater temperature abnormality and action

thereof creates any problems, issues or expected detrimental effects. Furthermore, the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed (see MPEP § 2141.02). Therefore, the examiner asserts that Beetz et al. does not teach away.

17. With respect to applicants' argument/reply that Beetz et al. is not directed to an increase in temperature of a semiconductor switch in accordance with the heater temperature, the examiner respectfully disagrees. As applicant has noted, Beetz et al. includes heat sink (6) on each power transistor (11) for a cooling effect. Beetz et al. is clearly concerned about an increase in temperature of a semiconductor switch (power transistor 11) in accordance with the heater temperatures (PTC elements).

18. With respect to applicants' argument/reply that Beetz et al. does not disclose shutout of heater energization by use of an alarm function of the semiconductor switch, the argument is deemed moot since the examiner has cited the prior art of McGregor et al. for that functionality.

19. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN J. RALIS whose telephone number is (571)272-6227. The examiner can normally be reached on Monday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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October 10, 2008